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| 09/176,580      | 10/21/98    | SUNDARAM             | R 501.12-0460       |

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EXAMINER

VERBITSKY, G

ART UNIT

PAPER NUMBER

2859

DATE MAILED: 06/14/00

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trad marks**

# Office Action Summary

Application No.  
**09/176,580**

Applicant(s)  
**Sundaram et al.**

Examiner  
**Gail Verbitsky**

Group Art Unit  
**2859**



☒ Responsive to communication(s) filed on May 12, 2000

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claim

☒ Claim(s) 2-20 is/are pending in the application

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 2-20 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☒ None of the CERTIFIED copies of the priority documents have been  
☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

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## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2-11 and 13-16 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over Boutaghou et al. '184 [hereinafter Boutaghou] in view Kennedy et al. [hereinafter Kennedy].

Boutaghou discloses in Figs. 1-4 a thermal asperity sensor comprising a slider body 12, transducers (magnetoresistive sensors) 18 located on an air bearing surface 14 (col. 5<sup>6</sup>, lines 6-7 and col. 6, lines 6-7), a control circuitry for moving a head and lifting it above a disc surface (col. 1, lines 27-30). The transducers 18 are coupled to a peak circuitry 25 detecting a voltage spike indicative of a "thermal asperity" on a disc through bond pads or terminals (conductive strips) on a surface of the slider body 12 (col. 3, lines 56-58) and being capable to detect PZT excitation or other signals (col. 3, lines 43-45), rails 26 where transducers 18 are deposited.

Boutaghou does not explicitly disclose a planar transducer, as stated in claim 2, conductive pads extending to the top of the glider, as stated in claim 6, pads in physical contact with the transducer, as stated in claim 8, and the limitations of claims 3-5 and 9-15.

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Kennedy discloses in Figs. 1-2 the sensor in the same field of endeavor comprising a flat (planar) transducer (col. 3, line 54) having electrical contacts (pads) on its free end (side) in order to be connected to electrical leads 17, 18 (conductive strips) (col. 11, lines 40-42) located on the top surface of the glider.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify a device disclosed by Boutaghou such that to have a transducer of a planar shape with pads attached to it, in order to be able to electrically connect the transducer through the leads to the measuring circuitry, as already suggested by Kennedy and very well known in the art.

Official Notice is taken with respect to a particular location of the conductive pads: as stated in claim 6: the particular location of the conductive pads, i.e., on the top of the slider, absent any criticality, is only considered to be the “optimum” or “preferred” location that a person having ordinary skill in the art at the time the invention was made, would have found obvious to determine using routine experimentation based, among other things, on the location of the peak circuitry and the size of the device.

Official Notice is taken with respect to claims 9-10: since particular size and location of the transducer absent any criticality, is only considered to be obvious modification of the size of the transducer and its location on the slider disclosed by Boutaghou.

Official Notice is taken with respect to claim 13: since positioning of the conductive strips on the plateau on the air bearing surface absent any criticality, is only considered to be “the

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optimum” or “preferred” location that a person having ordinary skill in the art would have found obvious to determine using routine experimentation based, among other things, on the size of the device, required accuracy and location of the peak circuitry.

With respect to claim 16: the method step will be met during the normal manufacturing of the device stated above.

3. Claim 12 is finally rejected under 35 U.S.C. 103(a) as being unpatentable over Boutaghou and Kennedy as applied to claims 2-11 and 13-16 above, and further in view of Flechsig et al. [hereinafter Flechsig].

Botaghou and Kennedy disclose a device as stated above in paragraph 2.

They do not explicitly disclose grounding of the thermal transducers.

Flechsig discloses in Fig. 9 a port 120 to which a sensor 91 is grounded.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to electrically ground transducers disclosed by Boutaghou to a ground port in order to limit or stabilize the voltage to ground as very well known in the art.

With respect to a common electrical ground as stated in claim 12: since it is very well known in the art to electrically ground transducers in the same circuitry or device to the same (common) electrical ground conductor in order to minimize number of lines having “0” potential in the same circuitry and noise-to-signal ratio.

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4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

***Allowable Subject Matter***

5. Claims 17-20 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2<sup>nd</sup> paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

6. Applicant's arguments filed on May 12, 2000 have been fully considered but they are not persuasive.

Applicant states that Kennedy does not teach a thermal transducer. Nonetheless, Kennedy teaches to make a transducer of a planar shape. Since Kennedy's invention is the same field of endeavor, Examiner is using Kennedy's teaching to modify Botaghau's device to have a planar transducer. The statement that Kennedy's sensor is not located on ABS is correct. However,

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Boutaghou's sensor is located on ABS, therefore, a combination of Boutaghou and Kennedy clearly teaches a planar thermal sensor located on ABS.

***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication should be directed to the examiner Verbitsky whose telephone number is (703) 306-5473.

Any inquiry related to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956.

GKV

June 12, 2000

  
G. BRADLEY BENNETT  
PRIMARY EXAMINER  
AU 2859